

PERCEIVED STRESS AND COPING STRATEGIES IN UNIVERSITY ADMINISTRATION AND SERVICES STAFF

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Abstract

This study was conducted to explore the stress levels and the coping strategies used by the administration and services staff (PAS) of a scientific and technical campus. This research was carried out among workers of the University of Granada. A total of 352 workers (55.4% woman and 44.6% man), representing 84% of the personal of the campus, completed anonymously questionnaires with regard to perceived stress rates measured by the Perceived Stress Scale (PSS-14 version), and the Stress Coping Questionnaire (CAE). Statistical analysis were performed to establish the relationship between the level of perceived stress and some socio-demographic variables such as age, marital status, number of children, people depending on them, healthy or harmful habits, years in the institution and type of contract, as well as coping strategies used.

The results show statistically significant differences in the level of perceived stress in some of the factors discussed, as well as certain relationship between stress levels and certain coping strategies.

Keywords: Perceived stress, stress coping, university staff

Introduction

Work-related stress is one of the most serious health problems today, not only affects workers to provoke physical or mental disability, but also to employers and governments, they begin to assess the financial damage they cause (Tello, Tolmos, Vázquez & Vázquez, 2001).

Stress is defined by Lazarus and Folkman (1984) as a result of the relationship between the individual and the environment, assessed at that as threatening, overflowing its resources and puts their welfare at risk. This definition is known as transactional theory of stress, according to her, so that a stress response occurs should be both internal and external conditions, and the relationship between them, leading to their appearance and personality

It is characterized by high levels of arousal and distress and often by feelings of not being able to cope with the demands of the job activation. To manage and cope, they turn to cognitive and behavioral responses (known as coping) that affects between perceived stress and somatic and psychological adjustment. The ability to handle stressful situations depends on the resources of coping with the subject that has to deal with that situation. These resources that the subject has stress are fundamental in the relationship, health and disease and are stable characteristics of the individual and the environment (Omar, 1995).

There are many definitions that have been presented in the literature to define the coping, however, the definition that has gained greater acceptance has been conceived as process (Lazarus, 1966, Lazarus & Folkman, 1986, Sandin, 1995). Thus, the term coping as cognitive and behavioral efforts to manage internal or external demands that are perceived as exceeding the resources of the person.

Since the transactional stress model of explanation, in the generation and development of it, different factors, from personal variables such as age, sex, marital status, number of children, etc. to psychological variables such as coping strategies used by each person

In the last decade the university sector in Spain has undergone a major transformation as a result of adaptation to European Higher Education Area. This adaptation has taken place in a short period of time and has led to numerous organization problems and management, such us new curricula, development of new qualifications or integration of ICT. It has also been accompanied by deep cuts in budgets, which has resulted in a significant decrease in staff, both teaching and research staff (PDI), and Administration and Services (PAS). Perhaps the main problem the universities are facing is the inability to ensure these people's job so we have to add the state of job insecurity that subjects perceived as a real possibility of losing their jobs.

The changing situation Spanish universities are facing today implies a rise in workers' obligations, an increase in job demands, as well as a loss of control due to the lack of resources to meet those demands or having to deal with new and unknown situations. All of this is causing psychological and physical discomfort in the subject, leading them to start suffering from stress (Mas Torelló, 2011). This is a problem for individuals who may have a

domino effect, as far as it becomes a determining factor in their overall quality of life, including family life.

The Spanish universities like many other organizations in general, do not pay the same attention to the risk of occupational stress that hygienic or safety risks. Possibly this is because the stress is not a very noticeable problem and its effects, including financial ones, tend to be underestimated. All this despite the fact that, statistically, stress situations cause great losses as a result of poor service, absenteeism, poor work climate, accidents, illness, addiction, etc.

Research in Spain on stress in education; have been particularly focused on primary and secondary education and very little in college (Mairal, 2010). Due to their working conditions: high stability and low workload, they have been considered bit stressful. In addition to that, studies conducted have focused particularly on analyzing academic stress (teachers, students), but these same studies have shown that stress is a fairly common problem throughout the university staff, and even more with the changes the university is currently undergoing (Guerrero Barona, 2003). As Avargues & Borda (2010) noted, the study of stress in the university would be incomplete if the professional activity of the PAS was not included.

Our study is therefore focused on the Administration and Services Staff University. We have set different goals, among which include coping strategies used by subjects to cope with stressful situations. The ability to handle stressful situations depends on the coping resources each person has because they play a crucial role in maintaining stress.

The aims of our study were:

1. Analyze the stress perceived level of the university PAS, the possible existence of sex differences and the relationship between the level of stress and some socio-demographic variables.
2. Identify and study the situations that generate high levels of stress in university PAS.
3. Identify the coping strategies used by individuals which may have a significant impact on them.

The results obtained will serve to raise awareness of the benefit of maintaining health and well-being, both physical and mental, and will be a valuable contribution to develop intervention programs aimed at strengthening the factors that act as moderators of stress at PAS.

Methodology

Participants

A total of 352 workers (55.4% women and 44.6% men) participated in this study. This sample represents 84% of the campus PAS (20% of university). The median age of the participants was 47.2 years (SD=9.3,

range 22-65). Table 1 shows the socio-demographic characteristics of the study participants. Full-time employees account for 79.3% (n=279) of the population. The mean years of service in the university was 17 years. PAS develops functions in the following areas: administration faculties and departments, maintenance, sports facilities and lab technician.

All participants in the study were informed of the survey's aim and assured that their responses would be kept strictly anonymous. Each completed questionnaire was put into an envelope, and then sealed by the participant him/herself. All completed questionnaires in sealed envelopes were sent to the research team for data processing. Ethical approval for the study was granted by the Human Research Ethics Committee for Non-Clinical Facilities of the University of Granada.

Instruments

Perceived Stress Scale EEP-14. (Remor & Carroble, 2001).

The level of perceived stress was evaluated by means of Spanish version of the Perceived Stress Scale (Cohen, Kamarch & Mermelstein, 1983). This scale is a self-report instrument that was originally developed as a 14-item scale that assess the perception of stressful experiences by asking the respondent to rate the frequency of his/her feelings and thoughts related to events and situations that occurred over the previous month. Seven out of the fourteen items of PSS-14 are considered negative (1, 2, 3, 8, 11, 12, 14) and the remaining seven as positive (4, 5, 6, 7, 9, 10, 13), representing perceived helplessness and self-efficacy, respectively. Each item was rated on a five point Likert-type scale (0 = *never*, 1 = *almost never*, 2 = *once in a while*, 3 = *often*, 4 = *very often*). Total scores for EEP-14 range from 0 to 56. Higher scores correspond to higher perceived stress. Regarding internal consistency of the EEP-14, Remor y Carroble (2001) obtained an alpha Cronbach value of $\alpha = .67$, and Remor (2006) a value of $\alpha = .81$.

Stress coping questionnaire CAE (Sandín & Chorot, 2003).

It is an instrument developed as a 42 items scale. Each item was rated on a five point Likert-type scale to score using the form of coping (0: *never*, 1: *rarely*, 2: *sometimes*; 3: *often*, 4: *almost always*). It is designed to assess seven different styles of coping: 1) focused on solving the problem (FSP), 2) negative self-targeting (AFN), 3) positive reappraisal (REP), 4) open emotional expression (EEA), 5) avoidance (EVT), 6) seeking social support (BAS) and 7) religion (RLG). The dimensions of coping questionnaire show low correlations with each other, allowing assess coping styles independently.

Statistical Analyses

Descriptive statistics (mean, standard deviation and range) were calculated with all socio-demographic variables selected. Data processing was performed with the SPSS statistical package (version 22.0). The reliability related to internal consistency of the full scale and subscales was by calculating Cronbach's alpha coefficient and consistency if the item is omitted. Alpha coefficient from .70 to .90 is considered satisfactory because a higher value may reflect unnecessary duplication of content items (Streiner, 2003). A minimum value of .30 has been considered a significant factor loading and interpretation of size based on those variables with factor loading of $\pm .50$ or more to have practical significance, as recommended by some authors (Hair, Black, Babin & Anderson, 2014). The analysis of differences in levels of perceived stress by various factors was conducted by Student t-test.

Sample adequacy to perform factorial analysis was further assessed by the Kaiser-Meyer-Olkin (KMO) measure and Barlett's test of sphericity.

Factor Structure

Perceived Stress Scale (EEP-14). To analyze the factorial structure of the scale we carried out an exploratory factor analysis (EFA) using the extraction method of principal components and Promax rotation method. The KMO measure was found to be .877, while Barlett's test of sphericity was significant, with $\chi^2 = 2,172.7$, $p = .000$. thus, fulfilling the prerequisites for conducting EFA. Since the EEP-14 includes items in both directions it has been estimated factorial two-factor solution, but, in general, we recommend using the scale as one-dimensional, considering that what it measures is simply stress (Campo-Arias, Bustos-Leiton & Romero-Chaparro, 2009; Pedrero-Pérez & Olivar-Arroyo, 2010). Together the two factors explained 53.0% of the variance. *Factor 1* consisted of items 1, 2, 3, 8, 11, 12, and 14, suggesting *no stress management*, with factor loadings between .390 and .800 and accounted for 34.1% of the variance; *Factor 2* comprised the remaining items 4, 5, 6, 7, 9, 10 and 13, related to *stress management*, with factor loadings between .554 and .801, and accounted for 19.8% of the variance. No double loadings occurred in the pattern matrix, with all significant item loadings >0.5 . The two factor structure was consistent with the factor structure revealed in most previous studies (Remor & Carrobbles, 2001). The full scale and subscales derived from *factor 1* and *factor 2* have high internal consistency (Cronbach's alpha .840, .821 and .814, respectively) within the recommended range (Campo-Arias et al., 2009). The correlation of each of the items with the total scale has proved adequate and the removal of any item not significantly enhanced the value of Cronbach's alpha.

Stress coping questionnaire (CAE). The value of the statistic Kaiser-Meyer- Olkin (KMO) and Barlett test ($KMO = .849$; $\chi^2 = 6,407.1$, $p = .000$) indicated that the data were adequate to the EFA used. One factor solution of seven factors, which represent the seven basic coping styles as indicated by most authors (González & Landero, 2007; Sandin & Chorot, 2003) was estimated. The factor solution explained on the whole a 53.7 % of variance (*factor 1*: 15.9 %, *factor 2*: 13.2 %, *factor 3*: 7,0 %, *factor 4*: 6,0 %, *factor 5*: 4,3 %, *factor 6*: 3,9 % and *factor 7*: 3.4%). The correlations between factors were low to moderate. The Cronbach reliability coefficients for the seven subscales ranged between 0.64 and 0.92 (mean = 0.79).

Results

Levels of perceived stress

To assess the state of stress in the studied sample, we have established as some authors did before (Kobra, Fariborz, Alehe, Sargazi, Alireza & Sargazi, 2014) three levels of stress according to scores on this scale : low perception : 0-18 , medium or moderate level of perception: 19-37 , high level : 38-56 .

The average perceived stress of the sample is 23.1 (SD = 8.3), range 46 and the median was 23. The 30.7 % of the subjects participating in the study show a low level of stress, a 64.3 % show moderate levels of stress, and a 5% (18 subjects) are at a high stress level. Scores on each of the items of the scale are between 1.3 and 2.6, i.e. at an average interval “moderate”.

Table 1 shows the levels of perceived stress in relation to the socio-demographic characteristics of the sample. The results show statistically significant differences in ratings (always women scores higher than man) in the following cases: married women - married men (24.1 vs 21.2; $t = -2.521$; $p = .012$); when they are aged between 35 and 50 (25.0 vs 21.6; $t = -2.573$; $p = .011$), when they have worked at the university between 6 and 10 years (24.0 vs 19.2; $p = -2.070$; $p = .042$), and when they have two children (25.6 vs 21.9; $t = -2.791$; $p=.007$). However, having habits like drinking and smoking, or doing some kind of physical activity do not seem to have any effect on stress levels.

Table 1. Perceived stress depending on sociodemographic variables.

Variable		Woman	Man	Sig.
		Average (SD) [n]	Average (SD) [n]	
Marital status	<i>Married</i>	24.1 (8.5) [111]	21.2 (7.3) [91]	$t = -2.521 \quad p = .012$
	<i>Single</i>	24.2 (8.7) [39]	27.7 (8.5) [28]	$t = -1.146 \quad p = .256$
	<i>Others</i>	21.6 (9.9) [32]	23.5 (7.8) [27]	$t = .816 \quad p = .418$
Age (years)	<i>< 35</i>	23.9 (8.6) [26]	20.0 (9.2) [15]	$t = -1.356 \quad p = .183$
	<i>35 – 50</i>	25.0 (8.8) [81]	21.6 (7.3) [69]	$t = -2.573 \quad p = .011$
	<i>> 35</i>	23.2 (8.0) [67]	22.0 (6.8) [53]	$t = -.882 \quad p = .380$
Job tenure (years)	<i>< 1</i>	22.4 (9.5) [10]	25.2 (9.2) [9]	$t = .658 \quad p = .519$
	<i>1 - 5</i>	22.2 (8.6) [22]	19.4 (6.9) [25]	$t = -1.215 \quad p = .231$
	<i>6 - 10</i>	24.0 (10.4) [44]	19.2 (7.1) [25]	$t = -2.070 \quad p = .042$
	<i>11 - 15</i>	26.6 (8.7) [46]	24.0 (6.6) [25]	$t = -1.239 \quad p = .188$
	<i>> 15</i>	23.5 (8.6) [105]	22.8 (7.5) [89]	$t = -.660 \quad p = .510$
Number of children / daughters	<i>0</i>	22.7 (8.2) [45]	22.8 (8.6) [44]	$t = .073 \quad p = .942$
	<i>1</i>	21.3 (8.2) [31]	20.9 (7.1) [21]	$t = -.191 \quad p = .849$
	<i>2</i>	25.6 (8.1) [79]	21.9 (7.4) [63]	$t = -2.791 \quad p = .007$
	≥ 3	21.8 (11.3) [28]	20.2 (7.0) [20]	$t = -.556 \quad p = .581$
People dependents	<i>Yes</i>	23.3 (9.1) [106]	22.0 (8.1) [88]	$t = -1.034 \quad p = .303$
	<i>No</i>	24.1 (8.4) [80]	22.1 (6.7) [62]	$t = -1.680 \quad p = .086$
Habits (drinking smoking,...)	<i>Yes</i>	23.5 (9.1) [140]	21.7 (7.3) [109]	$t = -1.654 \quad p = .090$
	<i>No</i>	24.9 (8.1) [43]	22.7 (8.0) [44]	$t = -1.292 \quad p = .200$
Physical activity	<i>Yes</i>	25.7 (8.4) [55]	22.3 (9.4) [23]	$t = -1.588 \quad p = .116$
	<i>No</i>	23.2 (8.9) [137]	21.8 (7.2) [132]	$t = -1.380 \quad p = .169$

Table 2. Scores [mean, (DT)] at coping strategies and correlation with perceived stress..

Strategy	Woman	Man	W + M	
			Coping strategy scores	Correlation with perceived stress scores
FSP	15.0 (4.4)	15.1 (4.7)	15.0 (4.5)	- 0.390 *
REP	14.2 (4.0)	13.4 (3.7)	13.9 (3.9)	- 0.288 *
BAS	12.4 (6.1)	9.8 (5.2)	11.2 (5.7)	0.270 **
EEA	6.5 (3.5)	5.4 (3.8)	6.0 (3.6)	0.314 *
AFN	7.5 (3.4)	8.8 (3.4)	8.1 (3.5)	0.363 *
EVT	6.2 (8.2)	6.2(7.2)	6.2 (8.1)	- 0.280 **
RLG	4.6 (5.2)	3.1(4.6)	3.9 (4.9)	0.238 *

* $p = 0.000$, ** $p > 0.05$

Regarding the 18 subjects of our population (14 women and 4 men) with high scores on perceived stress: a) 11 are married and 3 single, b) 8 are

aged between 36 and 50 years, 4 subjects older than 50 years, c) 5 have worked between 11 and 15 years, and 8 over 15 years, d) 12 subjects with two or more children and 5 have no children, e) 7 subjects have dependents, while that 11 no, f) 11 engaged in some form of physical activity, while 7 no.

Coping strategies

Participants in this study scored higher in active (FSP, REP and BAS) than passive (action-oriented and focused on emotion) coping strategies (Table 2). This pattern is repeated when considering socio-demographic variables selected in this study.

Correlation between perceived stress and coping strategies

Coping strategies that are negatively and significantly correlated with perceived stress (Table 2) are FSP and REP, while EEA, AFN, and RLG are positively and significantly correlated with perceived stress. BAS correlates positively and EVT correlates negatively, but in both cases the correlation is not significant.

Discussion

In the present investigation we had set three objectives.

Regarding the *first objective*, we detected sex differences in perceived stress, as women achieve significantly higher scores than men. A 95 % of the sample (54.5 % female, 45.5 % male) perceives a situation of moderate-low stress, women score higher always remain. However, the difference is more pronounced among subjects who have a high stress level, and that 78% (14 of 18) are women.

Married women attain significantly higher scores than men. "Being married" may mean for men a protective factor of stress (lower scores); however, for women, "being married" is associated with higher levels of perceived stress. Some studies indicate that married women seem to experience a special receptivity to stress (higher levels) due to factors such as family responsibility or extended working hours in and out of the house (Ramírez Velázquez, 2001). Although women in Spain have been gaining social space, those entering the labor market, make a "double" day, as they continue to assume most of the housework. Even if men spend more time on paid work, the total working time of women is higher and increases linearly according to the increase of the family which ultimately affects negatively their health compared to men (Cohen, Janicki-Deverts, & Miller, 2007). Compared to previous studies, others point out that women, because of different roles (marital, maternal, housewife, employee, etc.) need not necessarily suffer higher levels of stress. The positive or negative effects of

combining different roles depend on the context in which these (conditions, work, age of children, spousal support, etc.), not so much with the amount of role they perform. Excessive demands for care and lack of resources is what might explain the increased levels of stress (Gómez Ortiz, 2004).

Significant differences we found in those individuals who have worked at the university between 6-10 years. Possibly this may be because this period of work corresponds to greater efforts for promotion (both horizontally and vertically) with the consequent recognition (also of an economic nature). Moreover, in these early years of his professional career women they face different psychosocial factors than men, derived from more vital and impactful events on your health: pregnancy, childbirth, breastfeeding, and appear to experience , influenced by different mechanisms , a greater degree of psychological stress due to increased vulnerability to the effects of stress , although there are no gender differences in the degree of exposure to work stress , and exposure to more work stress than men (Velazquez-Machado, 2013).

Although maternal role is an important factor in the level of perceived stress for women (Gómez Ortiz, 2004), the number of children (daughters) does not appear to be a factor that give to rise significant differences. Curiously only when subjects have two children, scores of women are significantly higher than those of men.

The factor "having dependents" influences the perception of stress level significantly differently by gender, women's fashion tie. Care and work are often conflicting needs for informal caregivers. Having to care for a person supposed changes (reduction of working hours, request permission, reorganization of schedule, etc.), which besides being perceived as an overload can result in economic losses (possible withdrawal from the labor market, reduction hours at work, absenteeism, early retirement, etc.) and can generate stress, (Garcia-Calvente, Mateo-Rodriguez & Maroto-Navarro, 2004; Morris, 2002).

In regard to the factor "habits like drinking or smoking," we found that women who have these habits scored slightly higher on perceived stress compared with the scores of men. It is difficult to draw conclusions on this point, since it is known that stress induces the substance; however, the relationship is not unidirectional. That is, individuals can use substances in an attempt to self-medicate by tension or stress can result from the use of substances.

The practice of physical exercise, associated with psychological well-being (Jiménez, Martínez, Miró & Sánchez, 2008), does not seem relevant to the perception of stress in our research in any of the situations factor.

Regarding the *second objective* we have located 18 subjects (14 women and 4 men) with high scores on perceived stress. We found a positive

relationship between the level of stress (increase) and age, being married and if they have children. However, job insecurity does not seem to have a negative impact, since 78% are fixed, and 75% spent more than five years in the same job. There is a positive relationship between the level of stress (increase) and age, being married (or) and have children. Job insecurity has a negative impact especially pronounced in men with less than a year old (replacement staff), while from 5 years old has more weight age in the increased level of stress as the 78% are fixed. Possibly away from the situation of job insecurity in the country, our people, to meet the great majority in a permanent job, aspire more to get motivated to get their duties, higher salary or hold a job in line with training. For this group of persons, it is designing an intervention program for stress management.

Regarding the *third objective*, the participants in this study face stressful events using active coping strategies (FSP, REP and BAS are those that score higher), compared with passive or focused on emotion, it may be favorable for both their psychological well-being and your quality of life. This pattern is repeated when selected sociodemographic variables analyzed in this study. Women had significantly higher values than men in the ways of coping BAS and RLG, while men scored higher with a relative significance in AFN. Our results are consistent with other research on the existence of gender differences in the use of coping strategies, as well as the fact that women generally use more than men most coping strategies (Sandin & Chorot, 2003; Castaño, & León del Barco, 2010).

Correlations of perceived stress with coping strategies (Table 3) we have found in the sample studied, reveal the following: 1) FSP (direct and rational action to solve problematic situations) and REP (coping focused on creating a new meaning - positive - to the problem situation), which represent active forms of coping were significantly associated with low levels of perceived stress; 2) AFN (negatively convince himself, resign or take his own inability to solve the problem), EEA (behaving in a hostile manner, download moodiness with others or emotional outlet) and RLG (ask for spiritual help or attend church to pray the problem is solved), which represent passive coping strategies were significantly associated with high levels of perceived stress; 3) BAS and EVT (think or do other things, ignoring the problem or stressful situation) are forms of coping associated, although not significantly, the perceived stress.

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